



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/901,592	07/11/2001	William Holm	0104-0354P	7653
2292	7590	05/18/2006	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH			FULLER, ERIC B	
PO BOX 747			ART UNIT	
FALLS CHURCH, VA 22040-0747			PAPER NUMBER	
			1762	

DATE MAILED: 05/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/901,592

Applicant(s)

HOLM ET AL.

Examiner

Eric B. Fuller

Art Unit

1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8,19,20,31,34 and 37-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8,19,20,31,34 and 37-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 1.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Arguments***

The declaration filed on February 21, 2006 under 37 CFR 1.131 has been considered but is ineffective to overcome the Sano reference.

37 CFR 1.131 requires that the invention be conceived in this country, a NAFTA country, or a WTO member country. The declaration is silent to where conception took place. A similar statement is also required for where the invention was reduced to practice.

Because the declaration is ineffective in overcoming Sano, these rejections have been maintained.

Applicant argues the 35 USC 103 rejections. The applicant alleges that since Sano teaches to ink jet print fine solder particles, it fails to read on jetting solder paste. This is not found convincing. First, claim 1 only requires jetting a viscous material and does not require a solder paste. As for claim 37, which does require a paste, the reference teaches that the particles are heated to be soft and the process is specifically called "ink jet printing fine solder particles" (emphasis added). One of ordinary skill in the art would interpret the solder particles to read on being a solder paste. The particles are heated to be soft (slightly liquefied). They are viscous. The process is ink jet printing, which differentiates it from applying solid particles. Accordingly, the particles read on being a paste.

Art Unit: 1762

Applicant argues that the secondary references are silent to the process time between the screen-printing and jetting processes and alleges that the combination (optimization) of the two processes would have not been obvious. This is not found convincing. By looking at the two references in their entirety, the screen-printing process applies more material per unit of time than the drop-by-drop jetting process. Thus, one of ordinary skill would understand that the jetting process is a more time consuming, yet more precise method. Even without this teaching, to understand that precision requires more time is common sense. Therefore, the combination of reference would have been obvious, as shown in the rejection presented in the previous Office Action, and duplicated below. The rejections of the previous Office Action have been maintained.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5, 7, 8, 19, 20, 31, 34, and 37-41 are rejected under 35 U.S.C. 102(e) as being anticipated by Sano (US 6,264,097 B1).

Sano teaches a method where two layers of solder paste is applied to a substrate. It is taught that the first layer may be applied by screen-printing and the second layer may be applied by a jetting process (column 5, line 65 - column 6, line 5). This reads on the independent claims. By considering the lack of a second layer as being an error, the dependent claims are read upon.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8, 19, 20, 31, 34, 37-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pommer (US 5,839,188) in view of Huang et al. (US 6,100,787) and Ciardella et al. (US 5,711,989).

Pommer teaches that solder paste may be applied by screen-printing or solder jetting. The reference is silent to using a combination of both. However, Huang teaches that screen-printing has the benefit of being a speedy process, but often leads to uneven coatings (column 1, lines 10-31) and Ciardella discloses that solder jetting is a precise process, but is time consuming. Thus, the each method has a benefit that makes up for the deficiency of the other method. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to utilize a combination of the two methods in order to minimize the negative aspects of each

Art Unit: 1762

method. It is the position of the examiner that to perform the more precise method second would have been obvious in instances where precision is required. By doing so, precision is retained. Regardless of this position, using either order of methods would have at least been equally obvious.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric B. Fuller whose telephone number is (571) 272-1420. The examiner can normally be reached on Mondays through Thursdays.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Meeks, can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1762

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



EBF



**TIMOTHY MEEKS**  
**SUPERVISORY PATENT EXAMINER**